American National Standard

for Tree Care Operations —

Tree, Shrub, and Other Woody Plant Maintenance — Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)

ANSI A300 (Part 5)-2005 Management

Approved American National Standard

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A300 (Part 5)-2005

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Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices *(Management of Trees and Shrubs During Site Planning, Site Development, and Construction)*

Secretariat

Tree Care Industry Association, Inc.

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American National Standard

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Contents

Foreword (This foreword is not part of American National Standard A300 Part 5-2005)

An industry-consensus standard must have the input of the industry that it is intended to affect. The Accredited Standards Committee A300 was approved June 28, 1991. The committee includes representatives from the residential and commercial tree care industry, the utility, municipal, and federal sectors, the landscape and nursery industries, and other interested organizations. Representatives from varied geographic areas with broad knowledge and technical expertise contributed.

The A300 standards are placed in proper context if one reads the Scope, Purpose, and Application. This document presents performance standards for the care and maintenance of trees, shrubs, and other woody plants. It is intended as a guide in the drafting of maintenance specifications for federal, state, municipal, and private authorities including property owners, property managers, and utilities.

The A300 standards stipulate that specifications for tree work should be written and administered by a professional possessing the technical competence to provide for, or supervise, the management of woody landscape plants. Users of this standard must first interpret its wording, then apply their knowledge of growth habits of certain plant species in a given environment. In this manner, the users ultimately develop their own specifications for plant maintenance.

ANSI A300 Part 5 – *Management of trees and shrubs during site planning, site development, and construction*, should be used in conjunction with the rest of the A300 standard when writing specifications for tree care operations.

Suggestions for improvement of this standard should be forwarded to: A300 Secretary, c/o Tree Care Industry Association, 3 Perimeter Road – Unit 1, Manchester, NH 03103, USA or e-mail: tcia@treecareindustry.org

This standard was processed and approved for submittal to ANSI by Accredited Standards Committee on Tree, Shrub, and Other Woody Plant Maintenance Operations – Standard Practices, A300. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the A300 committee had the following members:

Tim Johnson, Chair
(Artistic Arborist, Inc.)
Bob Rouse, Secretary
(Tree Care Industry Association, Inc.)

Organizations Represented	*Name of Representative*
American Nursery and Landscape Association	*Craig J. Regelbrugge*
	Warren Quinn (Alt.)
American Society of Consulting Arborists	*Tom Mugridge*
	Donald Zimar (Alt.)
American Society of Landscape Architects	*Ron Leighton*
Asplundh Tree Expert Company	*Geoff Kempter*
	Peter Fengler (Alt.)
Bartlett Tree Expert Company	*Peter Becker*
	Dr. Thomas Smiley (Alt.)

Davey Tree Expert Company ..... *Joseph Tommasi*
Dick Jones (Alt.)
International Society of Arboriculture ..... *John Ball*
Kevin Eckert(Alt.)
National Park Service ..... *Robert DeFeo*
Dr. James Sherald (Alt.)
Professional Land Care Network ..... *Preston Leyshon*
Tanya Tolpegin (Alt.)
Professional Grounds Management Society ..... *Tom Shaner*
Society of Municipal Arborists ..... *Andrew Hillman*
Mike Dirksen (Alt.)
Tree Care Industry Association ..... *James McGuire*
U.S. Forest Service ..... *Ed Macie*
Keith Cline (Alt.)
Utility Arborist Association ..... *Matthew Simons*
Jeffery Smith (Alt.)

Additional organizations and individuals:

American Forests (Observer)
Beth Palys (Observer)
Peter Gerstenberger (Observer)
Myron Laible (Observer)
Richard Rathjens (Observer)
Richard Roux (NFPA-780 Liaison)
Sharon Lilly (Observer)

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Clause 1 excerpted from ANSI A300 (Part 1) – 2001 Pruning

1 ANSI A300 standards

1.1 Scope

ANSI A300 standards present performance standards for the care and maintenance of trees, shrubs, and other woody plants.

1.2 Purpose

ANSI A300 standards are intended as guides for federal, state, municipal, and private authorities including property owners, property managers, and utilities in the drafting of their maintenance specifications.

1.3 Application

ANSI A300 standards shall apply to any person or entity engaged in the business, trade, or performance of repairing, maintaining, or preserving trees, shrubs, or other woody plants.

1.4 Implementation

Specifications for tree maintenance should be written and administered by an arborist.

50 Part 5 – Management of trees and shrubs during site planning, site development, and construction – standards

50.1 Purpose

The purpose of this clause is to provide standards for developing specifications for the management of trees and shrubs during site planning, site development, and construction.

50.2 Reasons for management of trees and shrubs during site planning, site development, and construction

Trees and shrubs are conserved during site planning and development for a variety of reasons, including economic, social, environmental, and cultural factors. Trees and shrubs are conserved for individuals or communities wishing to make the best use of their tree and shrub resources.

50.3 Safety

50.3.1 Tree maintenance shall be performed only by arborists or arborist trainees who, through related training or on-the-job experience, or both, are familiar with the practices and hazards of arboriculture and the equipment used in such operations.

50.3.2 Arborists shall follow appropriate safe work practices.

50.3.3 This standard shall not take precedence over arboricultural safe work practices.

50.3.4 Operations shall comply with applicable Occupational Safety and Health Administration (OSHA) standards, ANSI Z133.1, as well as state and local regulations.

51 Normative references

The following standards contain provisions that, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated.

ANSI Z133.1, *for Arboricultural Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements*

29 CFR 1910, *General industry* [1)]

29 CFR 1910.268, *Telecommunications* [1)]

29 CFR 1910.269, *Electric power generation, transmission and distribution* [1)]

29 CFR 1910.331 - 335, *Electrical safety-related work practices* [1)]

52 Definitions

52.1 arborist: An individual engaged in the profession of arboriculture who, through experience, education and related training, possesses the competence to provide for, or supervise the management of, trees and other woody ornamentals.

52.2 arborist trainee: An individual undergoing on-the-job training to obtain the experience and the competence required to provide for, or supervise the management of, trees and woody ornamentals. Such trainees shall be under the direct supervision of an arborist.

52.3 conservation (retention): The deliberate holding and protecting of existing forests, trees, shrubs, or plants during the development process.

52.4 critical root zone: The minimum volume of roots necessary for maintenance of tree health and stability.

52.5 development impacts: Site development and building construction related actions that damage trees directly, such as severing roots and branches, or indirectly, such as soil compaction.

52.6 dripline: An imaginary line defined by the branch spread.

52.7 root zone: The volume of soil containing the roots of a plant.

52.8 shall: As used in this standard denotes a mandatory requirement.

52.9 should: As used in this standard denotes an advisory recommendation.

52.10 site survey: A map showing relevant, existing site features and vegetation on a site proposed for development.

52.11 specifications, industry-standard: Details that set result-orientated expectations for the manufacture of a specific product or provision of a specific service, written in compliance with industry-consensus standards.

52.12 standards, industry-consensus: A set of parameters developed by a group of materially affected parties in accordance with accepted essential requirements for openness, balance, consensus and due process. The parameters provide the minimum requirements and recommendations for manufacture of products, provision of services, or safety.

52.13 suitability for conservation: A rating system that combines tree health and structure with species tolerance to development impacts.

52.14 tree inventory: A comprehensive list of individual trees providing descriptive information on all or a portion of the project area.

52.15 tree protection zone: A space above and below ground within which trees are to be retained and protected .

52.16 tree protection zone barriers: Devices such as fencing, berms, or signage installed to limit access to tree protection zones.

52.17 tree resource evaluation: A document or site plan describing the tree resources on the site, with information provided from an inventory or survey such as: tree species, size, location, condition, plant community, structure, health, and population estimate.

52.18 tree survey: A description of trees within all or a portion of the project area based on defined criteria, such as representative sampling or tree size.

53 Managing trees and shrubs during site planning, site development, and construction – practices

53.1 Managing trees and shrubs during site planning, site development, and construction – objectives

The objective of tree management is to conserve trees and shrubs during site planning, construction,

[1)] *Available from U.S. Department of Labor, 200 Constitution Avenue, NW, Washington, DC 20210.*

and post-construction maintenance phases of development.

53.2 General

53.2.1 Production of a tree management plan and specifications should be directed by an arborist qualified in management of trees and shrubs during site planning, site development, and construction.

53.2.2 Tree management plans shall be in compliance with applicable ordinances, rules, regulations, and standards.

53.3 Planning phase

A site survey should be made showing all relevant features. The site survey should include a tree resource evaluation.

53.3.1 Tree resource evaluation scope

53.3.1.1 An arborist or other qualified person shall complete the tree resource evaluation.

53.3.1.2 The scope of the tree resource evaluation shall be established.

53.3.1.3 If a condition is observed requiring attention beyond the original scope of work, the condition shall be reported to an immediate supervisor, the owner, or the person responsible for authorizing the work.

53.3.2 Suitability for conservation

Suitability ratings should be assigned (See **Annex A**).

53.4 Design phase

53.4.1 A tree management report should be developed.

53.4.2 The tree management report should include an evaluation of impacts on trees and shrubs from proposed site development and construction (See **Annex A**).

53.4.3 Implementation of tree conservation recommendations

53.4.3.1 Tree conservation plans should be documented in the site development plans. Documentation should include locations of:

a. trees to be preserved;
b. tree protection zones;
c. tree protection zone barriers;
d. soil erosion controls;
e. staging and storage areas;
f. utilities; and,
g. other on-site activities.

53.4.3.2 The tree conservation recommendations should be implemented. Consequences for non-compliance should be specified.

53.4.3.3 Demolition plans should detail all relevant site features.

53.4.3.4 Demolition plans should denote all trees to be conserved and removed.

53.5 On-site pre-construction phase

53.5.1 Tree protection specifications and goals shall be communicated to those implementing the plans.

53.5.2 Tree protection zone barrier(s) should be installed prior to site work.

53.5.3 Tree removal operations should not damage trees scheduled for retention.

53.6 On-site construction phase

53.6.1 Implementation of the recommendations should be monitored by an arborist.

53.6.2 Levels of compliance should be documented and reported.

53.6.3 In the event of damage to barriers and/or trees, corrective measures should be specified and implemented.

53.6.4 Tree health should be monitored.

53.7 Post-construction phase

53.7.1 Tree conservation recommendations should be revised if the construction activity has significantly altered tree health and maintenance needs.

53.7.2 Tree health should be monitored.

53.7.3 Long-term tree maintenance specifications should be implemented.

Annex A
(informative)

Management report information

A-1 Some factors to consider when evaluating suitability for conservation:

A-1.1 Tree health
Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

A-1.2 Structural integrity
Trees with significant wood decay and/or other structural defects or conditions should not be conserved in areas where damage to people or property is likely.

A-1.3 Species response
There is a wide variation in the response of individual species to construction impacts and changes in the environment.

A-1.4 Tree age and longevity
While having significant emotional and aesthetic appeal, old trees may have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

A-1.5 Cost-benefit analysis
The relationship between cost of conservation and the benefits of the tree should be considered.

A-2 Example of suitability ratings

A-2.1 Good: These are trees with good health and structural stability that have the potential for longevity at the site.

A-2.2 Moderate: Trees in this category have fair health and/or structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring, and may have shorter life-spans than those in the "good" category.

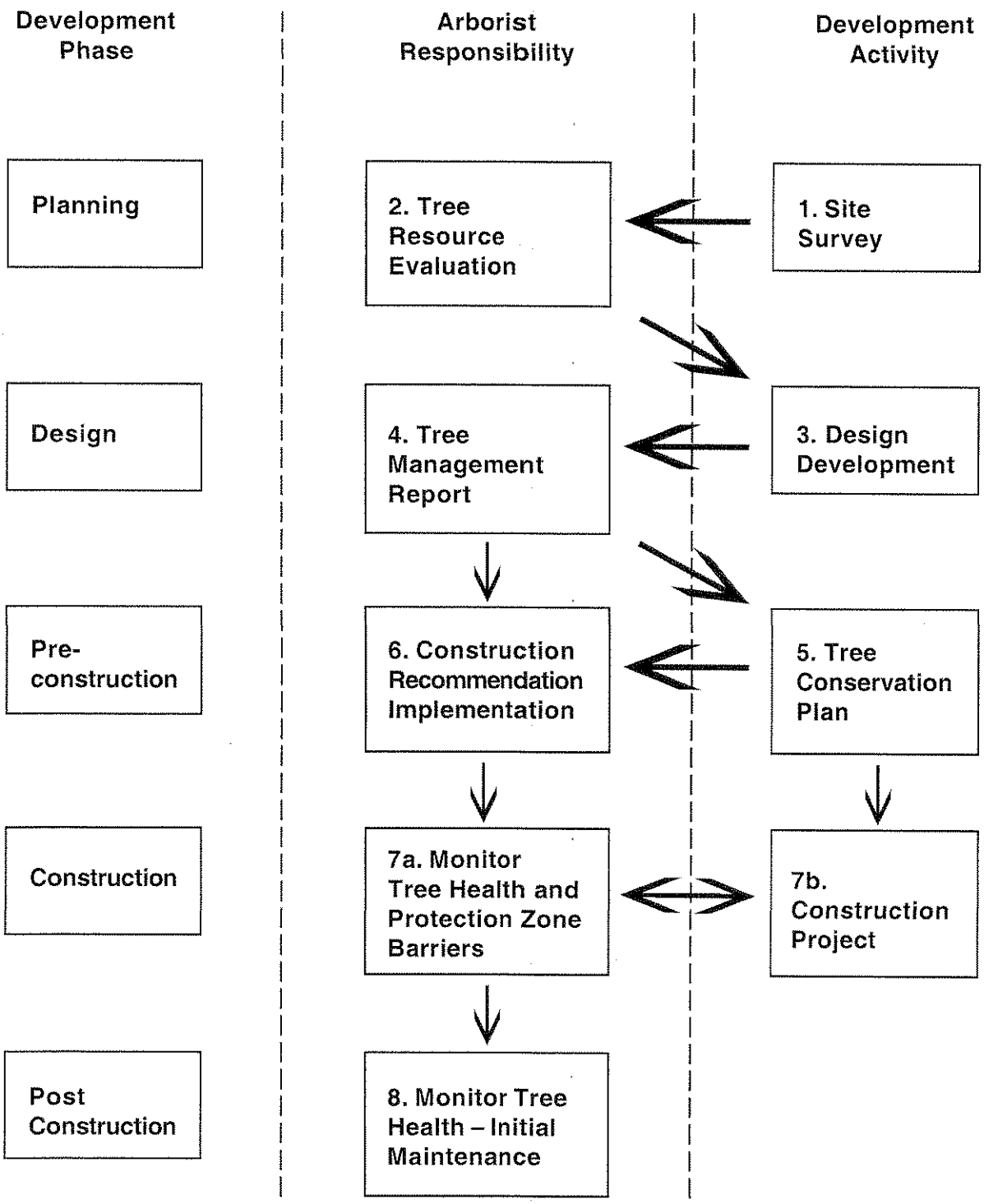
A-2.3 Poor: Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas.

A-3: The tree management report should include:

- **A.** tree locations shown on the land survey;
- **B.** description of the applicable tree population (for example, species, and condition distribution);
- **C.** suitability for conservation ratings (Good, Moderate, Poor);
- **D.** limits of construction, including demolition, grading and drainage, site and utility construction, and landscape plan;
- **E.** evaluation of effects to trees;
- **F.** notes on the proximity of trees to existing and proposed structures, roads, utilities, etc.;
- **G.** recommendations for retention/removal (see 53.4.3);
- **H.** recommendations for design changes (see 53.4.3);
- **I.** tree conservation recommendations and specifications (see 53.4.3); and,
- **J.** post-construction recommendations and specifications.

Annex B
(informative)

Management planning flow chart



Annex C
(Informative)

Purpose and implementation information

C-1 ASC A300 believes the true value of this standard is in setting the requirements and recommendation for a standard tree preservation report.

C-2 Specifications are not provided directly in the standard because they vary depending on species of tree; soil condition; construction/demolition activity; etc.

C-3 Agencies with land or resource preservation ordinances often require a tree conservation plan to be filed (much like an environmental impact statement) if triggered by specific criteria developed by the town, city, or jurisdiction such as number of trees affected; size and species of trees affected; lot size; type/zoning of development. ANSI A300 Part 5 is the standard for what the required plan should contain. Actual contents of the plan could also be altered based on the scope of specific projects.